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10/590,033	05/08/2007	Kengo Yagyu	295119US8PCT	6929
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			ELLIOTT IV, BENJAMIN H	
			ART UNIT	PAPER NUMBER
			2474	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/590,033	Applicant(s) YAGYU ET AL.	
	Examiner BENJAMIN ELLIOTT	Art Unit 2474	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 5-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/15/2009 and 9/24/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In response to the Office action mailed 3/06/2009, Claims 1 and 5-10 have been examined and are pending. Claims 1 and 5 have been amended, and Claims 2-4 have been canceled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

Art Unit: 2474

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1 and 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,810,259 B1 to Zhang (hereinafter "Zhang"), in view of US Patent Publication 2003/0112810 A1 to Nakabayashi et al. (hereinafter "Nakabayashi").

Regarding Claim 1, Zhang discloses **a packet transmission system comprising:**
a plurality of wireless base stations (Zhang: Figure 3a. The network comprises at least two base stations.);
and one or more terminal devices belonging to one of the wireless base stations (Zhang: Figure 3a; Col. 7, lines 10-15. Each base station has at least one mobile host belonging to it.);

Art Unit: 2474

wherein each of the wireless base stations has a location table describing each of the terminal devices associated with a corresponding wireless base station to which the terminal device currently belongs (Zhang: Col. 10, lines 21-29. Each base station contains a copy of a local subscriber list of its mirrored base station. Col. 10, lines 45-55. Each list contains the subscriber information of the terminal, and the associated base station that owns the subscriber.), **and each of the wireless base stations is configured to exchange the information in the location table with the other wireless base stations to update the location table** (Zhang: Col. 11, lines 33-38. Each base station is operative to transmit copies of the list to its associative mirror base station.), **and each of the wireless stations is configured to, upon receiving a packet, identify a wireless base station to which the source terminal device or the destination terminal device currently belongs based on a source address of the source terminal device or a destination address of the destination terminal device, respectively, included in the received packet.** (Zhang: Col. 31, lines 4-19. Part of the process for authenticating a new host is to have mirrored base stations search their subscriber profile lists for the new host. Col. 10, lines 55-59. Each global/subscriber list contains the address associated with the mobile host.)

Zhang is silent on forwarding to the next hop.

Nakabayashi discloses **a route control table describing each of the other wireless base stations in the network in association with the next hop to which the received packet is to be forwarded if a source terminal device**

Art Unit: 2474

or a destination terminal device currently belongs to one of the wireless base station (Nakabayashi: Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated with a plurality of terminals existing in the direction of the connected, associated bridge. [0053]. A parameter table contains information corresponding to a port described in the routing table. [0059]. The connected bridge ID field contains the ID of the neighboring wireless bridge connected to the wireless bridge. [0064]. The packet is determined to be local or multicast.). Nakabayashi further discloses the ability to **transmit the packet to the next hop to which the received packet is to be forwarded with reference to the route control table** (Nakabayashi: [0066]. The connection table is then utilized to determine the next wireless bridge to forward the packet based on the destination address and signal quality.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include forwarding packets through a transmission line as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network ([0098]).

Regarding Claim 5, Zhang in view of Nakabayashi discloses **the packet transmission system of claim 1**, but is silent on IDs of transmission trees.

Nakabayashi discloses **wherein the received packet includes an ID of the transmission tree used to transmit said received packet or address information representing a wireless base station to which the source**

Art Unit: 2474

terminal device or the destination terminal device currently belongs

(Nakabayashi: [0059]. The connected bridge ID field (of the parameter table, in association with the routing table) contains the ID of the neighboring wireless bridge connected to the wireless bridge. Figure 5 shows multiple entries in the "Bridge ID" column suggesting multiple wireless bridges connected.).

Zhang is silent on forwarding the packet to a next hop.

Nakabayashi discloses **and wherein each of the wireless base stations is configured to determine the next hop to which the received packet is to be forwarded from the route control table based on the ID information of the transmission tree or the address information of the wireless base station included in the packet** (Nakabayashi; [0019]. Packets can either be multicast or broadcast along a transmission signal to wireless bridges in a network. The packet contains a destination address. Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated with a plurality of terminals existing in the direction of the connected, associated bridge. [0053]. A parameter table contains information corresponding to a port described in the routing table. [0059]. The connected bridge ID field contains the ID of the neighboring wireless bridge connected to the wireless bridge. [0064]. The packet is determined to be local or multicast.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include forwarding packets through a transmission line as taught by Nakabayashi to

Art Unit: 2474

increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network ([0098]).

Regarding Claim 6, Zhang discloses **a wireless base station constituting, together with other wireless base stations, a packet transmission system using a wireless packet network** (Figure 3a. The network comprises at least two base stations. Col. 7, lines 10-15. Each base station has at least one mobile host belonging to it.), **comprising:**
a location table describing each of terminal devices currently participating in the network associated with a corresponding one of the wireless base stations to which said terminal device currently belongs (Col. 10, lines 21-29. Each base station contains a copy of a local subscriber list of its mirrored base station. Col. 10, lines 45-55. Each list contains the subscriber information of the terminal, and the associated base station that owns the subscriber.).

Zhang is silent on incorporating a routing table, receiving and transmitting units, and a route determination unit.

Nakabayashi discloses **a route control table describing information items about transmission routes used in the packet transmission system, each information item being associated with one of the other wireless base stations assuming that said one of the other wireless base stations is related to a source or a destination** (Nakabayashi; Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated

Art Unit: 2474

with a plurality of terminals existing in the direction of the connected, associated bridge.);

a packet receiving unit configured to receive a packet (Nakabayashi; Figure 4, [0046]. The wireless bridge contains a transmission/reception circuit, 11.);

a route determination unit configured to determine a route used to transmit the received packet based on information contained in the received packet (Nakabayashi; Figures 4 and 8, [0066]. The connection table contains information identifying other wireless bridges in the range where packets may be sent or received.);

and a packet transmission unit configured to transmit the packet to a next hop according to the route control table (Nakabayashi; Figure 4, [0046]. The wireless bridge contains a transmission/reception circuit, 11.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include a routing table, receiving and transmitting units, and a route determination unit as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network ([0098]).

Regarding Claim 7, Zhang discloses the wireless base station of claim 6, determining a wireless base station to which the identified terminal device currently belongs with reference to the location table (Zhang: Col. 31, lines 4-19. Part of the process for authenticating a new host is to have mirrored base stations search their subscriber profile lists for the new host. Col.

Art Unit: 2474

10, lines 55-59. Each global/subscriber list contains the address associated with the mobile host.).

Zhang is silent on the route determination unit identifying a terminal and forwarding the packet to the next hop.

Nakabayashi discloses **wherein the route determination unit identifies a terminal device indicated by a source address or a destination address contained in the received packet** (Nakabayashi; Figures 4 and 8, [0066]. The connection table contains information identifying other wireless bridges in the range where packets may be sent or received.) **and finds the next hop in the route control table** (Nakabayashi; Figure 4, [0047]. Each wireless base station contains a routing table. Figure 5, [0050]. The table contains information regarding a plurality of ports of a wireless bridge associated with a plurality of terminals existing in the direction of the connected, associated bridge. [0053]. A parameter table contains information corresponding to a port described in the routing table. [0059]. The connected bridge ID field contains the ID of the neighboring wireless bridge connected to the wireless bridge. [0064]. The packet is determined to be local or multicast.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include a route determination unit as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network ([0098]).

Regarding Claim 8, Zhang discloses **the wireless base station of claim 6, wherein the packet transmission unit broadcasts a message packet reporting participation of a new terminal device when the new terminal device belongs to the wireless base station** (Zhang: Col. 22, lines 24-42. A message is propagated from a base station, either through multicasting or broadcasting, when a new mobile host enters (authenticated) the coverage area of said base station.).

Regarding Claim 9, Zhang discloses **the wireless base station of claim 6**, but is silent on having a route determination unit updating the location table.

Nakabayashi discloses **wherein when the receiving unit receives a message packet reporting a new terminal device having belonged to one of the other wireless base stations, the route determination unit updates the location table** (Nakabayashi; Figure 4, [0048]. A processor contained in each wireless bridge executes network topology control used for updating table information such as wireless bridge path setting.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include a route determination unit as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network ([0098]).

Regarding Claim 10, Zhang discloses **the wireless base station of claim 6**, is silent on receiving the packet, writing an address, and forwarding the packet.

Art Unit: 2474

Nakabayashi wherein when the receiving unit receives a packet from a source terminal device belonging to this wireless base station, the packet transmission unit writes an address of a destination side wireless base station to which a destination terminal device currently belongs in the packet, and then transmits the packet to the next hop according to the route control table (Nakabayashi; [0096]. If the destination address of the received message matches that of a wireless port number associated with another base station, a MAC frame is attached, which corresponds to a RA (forwarding destination address) of another base station, and then transmitted.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Zhang to include forwarding packets through a transmission system as taught by Nakabayashi to increase message forwarding efficiency in a bridge protocol processor and in the wireless section of the network ([0098]).

Response to Arguments

6. Applicant's arguments with regards to Claim 1 and Claim 6 filed 7/02/2009 have been fully considered but they are not persuasive. Applicant argues reference to Nakabayashi fails to disclose:

a route control table describing each of the other wireless base stations in the network in association ***with the next hop to which the received packet is to be forwarded*** if a source terminal device or a destination terminal device currently belongs to one of the wireless base stations.

Nakabayashi discloses the routing table (Nakabayashi: Figure 5 and [0050-0051]) to contain port numbers (associated with terminals connected to the wireless bridge), bridge IDs, and destination addresses (of terminals connected to the wireless bridge). The ports of the wireless bridge may also be connected to other wireless bridges (Nakabayashi: [0050]). The port numbers are associated with the wireless bridge of an associated bridge connected to that port. The port numbers are then associated with other wireless base stations and terminals connected to any particular bridge.

Further, Nakabayashi discloses forwarding to the next hop. A connection is established with viable (usable) wireless bridges in the network based on signal quality or reception levels (Nakabayashi: [0073]). Once the tree is determined, a route is determined ("path setting" of [0073]). Thus, a next hop may be determined from the set path.

7. Applicant's arguments with respect to claim 5 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory

Art Unit: 2474

action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN ELLIOTT whose telephone number is (571)270-7163. The examiner can normally be reached on Monday thru Friday, 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on (571)272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2474

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Aung S. Moe/
Supervisory Patent Examiner, Art Unit 2474

BENJAMIN ELLIOTT
Examiner
Art Unit 2474